Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Application of WorldCom, Inc. and	)	CC Docket No. 97-211
MCI Communications Corporation for	)	
Transfer of Control of MCI Communications	)	
Corporation to WorldCom, Inc.	)	

Reply Comments

David Holub
100 Apartment B Edgewood Avenue
San Francisco, CA 94117
(415) 566-4606 phone
(415) 566-8077 fax
holub@vix.com

My name is David Holub and I am an Engineer and Vice President of Business Development at Vixie Enterprises in Redwood City, California. Vixie Enterprises is a consulting, technical services and network products company that traces its involvement in the Internet back to 1980. Vixie Enterprises' many contributions to the Internet include software essential to the continuing operation of the Internet, most notably Domain Name Service (DNS). My personal involvement in the Internet dates back to November of 1993 when I founded Hooked Inc. of San Francisco, California, and served as its President and Chief Technical Officer (CTO). Hooked was merged with The WELL to form Whole Earth Networks (WENET) in July of 1996. I then served as President and CTO of the combined entity prior to joining Vixie Enterprises in July of 1997. My experience of building what became one the largest independent Internet Service Providers (ISPs) in California included directing it to become the first ISP to acquire Competitive Local Exchange Carrier (CLEC) and Inter-Exchange Carrier (IXC) status.

These efforts afforded me the opportunity to become accomplished in many of the skills necessary to operate such an organization. These included telecommunications engineering, regulatory process and interconnection negotiation, TCP/IP network engineering and UNIX system administration. I have also had the opportunity on a number of occasions to meet directly with several of the Commissioners of the California Public Utilities Commission and their staff to brief them on the issues facing ISPs in the California telecommunications marketplace. My first presentation on this subject was to the National Telecommunications and Information Administration (NTIA) in May of 1994 at their hearings regarding "Innovation and the Public Interest: Open Access to the Information Society." I filed these comments to present my personal

views, not on behalf of Vixie Enterprises. These comments are in opposition to the proposed WorldCom MCI merger.

It is my opinion that this merger will establish a dominant telecommunications giant that will set the terms and conditions for interconnection across the Internet through unfair and discriminatory practices. This, contrary to the claims of WorldCom, will further reduce competition for services and service quality for all Internet users. This opinion flows from my direct experience in establishing and maintaining interconnection with other networks at multiple exchange points, including experience with UUNet, now WorldCom and MCI. Hooked Inc. was an early participant in this type of interconnection when it began peering with other ISPs at MAE-West in August of 1995. Additionally, upon merging with The WELL, I took over administrative control over its interconnection at the PacBell NAP.

The actual process of interconnection at public exchange points is rather simple. First, a network leases facilities for interconnection at the exchange point. Then, for two willing networks to interconnect directly, engineers for the two potential peers exchange email regarding the Autonomous System Number (AS) of their network and a corresponding interface at the exchange point over which this interconnection will be established. After these peering sessions are achieved, this interconnection requires ongoing administration and maintenance by engineering staff. Over the two years that I was involved in this process at MAE-West and the Pacific Bell NAP, I established interconnection with over 100 other networks, including MCI and WorldCom. As our own operations and the industry grew so too did the difficulty with which one could administer and establish interconnection with a very small number of

participants at these exchange points. They were and remain MCI, WorldCom and Sprint. All other networks with direct connections to public exchange points that I am aware of are generally interested in expanding and enhancing their interconnection with other networks across the Internet backbone.

This is very telling of the interests of these competitive networks, because willingness to interconnect is a function of their desire to enhance the level of service available to their Internet users. The greater the number of interconnection points between networks and the greater the capacity of that interconnection at those points, the higher the quality of service that is delivered to the interconnected networks' users. It is important to understand that there are generally no technical reasons not to interconnect—only economic or anti-competitive ones. To be sure, the unwillingness of WorldCom to interconnect with new networks, increase their existing level of connectivity with other networks at these public exchange points or upgrade the public interconnection facilities they control is purely because they don't want to assist in the development of a more competitive marketplace. Leasing of facilities to their competitors for these purposes is brisk. There is no short-term economic argument against enhanced interconnection; rather their anti-competitive interconnection behavior is to the detriment of all Internet users, including their own customers, but in the longer-term interests of their shareholders and management.

By way of example, I attempted to negotiate peering at other exchange points, including MAE-East, the Sprint NAP and the Ameritech NAP, with WorldCom. In all respects WorldCom proved to be unresponsive. As widely reported in the press at the time, WorldCom was not only

unwilling to expand its interconnection with WENET but it threatened to cut off peering with WENET and a large number of other similarly situated networks. After WENET asserted its rights to interconnection as a Telecommunications Carrier, WorldCom became outright hostile to the expansion of interconnection with WENET. This is both illustrative and ironic, meaning it is one more example of WorldCom's pattern of anti-competitive behavior and it is ironic in that both WorldCom and MCI have an established history of arguing before regulatory authorities for interconnection between themselves and incumbent Telecommunications Carriers in order to develop a more competitive marketplace for telecommunications services.

This bad faith takes an even more pernicious form in their abuse of Non Disclosure Agreements (NDAs). The salient elements in these refusals to interconnect are their unwillingness to disclose the existing terms and modality under which they currently interconnect with other networks, the criteria necessary to establish or enhance interconnection and the commitment to interconnect with any other network under similar terms and conditions. This is fundamentally discriminatory and anti-competitive. The non-disclosure of these terms and conditions for interconnect and the unwillingness to make those terms and conditions available on a non-discriminatory basis are the single largest threats to competition across the Internet backbone today. This has gone to the extreme that WorldCom has cloaked their interconnection behind long-term NDAs, the very existence of which is covered in the NDAs that they force their peers to sign in order to maintain peering. This has a variety of chilling effects on competition.

- It precludes good faith bargaining for terms and conditions between competitors.

- It adds the threat of legal intimidation to the threatened cut-off of interconnection, thus silencing its competitors regarding their anti-competitive actions.

- It purports to call "proprietary" that which by definition lies in the public realm.

- It makes it impossible to have effective public debate of these issues between and among the affected parties.

- It makes it substantially more difficult for their competitors to negotiate for the use of their leased facilities at the very same time that the scarcity of those facilities has anti-competitive effects on their competitors' networks.

- The effect of these NDAs in the context of this merger process is profound. Meaning, if WorldCom's existing peers were not threatened with cut-off of their existing interconnection, legal intimidation and pricing retaliation for scarce required facilities under the control of WorldCom, there would be ample evidence of operational requirements for new peers not required of existing peers, failure of WorldCom to reengineer routes or increase capacity as new peers connect, poor maintenance of interconnection facilities, failure to increase capacity with existing peers and discriminatory pricing practices.

So, together with their refusal to establish or enhance interconnection with other networks through their abuse of NDAs, WorldCom exercises its control and manipulation of the fabric over which interconnection can take place. This allows it to abuse its market power over the backbone by asserting anti-competitive practices that not only choke off new competition but increase congestion encountered over the flow of Internet traffic itself. Obviously, beyond limiting choice, this reduces the quality and availability of Internet service for all users.

In conclusion, the FCC and Congress have decided not to regulate the Internet or require mandatory interconnection and non-discriminatory pricing. It is often said that the phenomenal growth of these services takes place in a environment unfettered by regulation such that vibrant

competition and innovation flourish. True or not, it is indisputable that the relationship between competition in the market and regulatory oversight as it relates to growth in the Internet is not well grasped nor has it been translated into policy designed to achieve the goals of competition, innovation, engagement and/or universal Internet service. Rather, the prevailing policy is "hands off": the market itself will achieve these goals on its own and any regulation will harm more than it helps to achieve these goals. I assert that not only is this merger not in the public interest but that we have reached a point in the development of this industry where the lack of regulation of telecommunications interconnection as it relates to the Internet is also not in the public interest.

No doubt a major force behind the proposed immediate concentration of 50% or more of all Internet traffic into the hands of a single entity and the proliferation of ISPs in general is the unregulated issue of interconnection. Interconnection issues in the Internet extend to both the issue of "peering" and the exemption of ISPs from tariffs related to dialing into Local Exchange Carriers (LECs). It is my view that the lack of enforcement of fair and non-discriminatory interconnection in both these areas of telecommunications—I say both because the 1996 Telecommunications Act makes no distinction between data and voice in its definition of telecommunications, and dialing up via modem to an ISP is by definition interconnection between the LEC and the ISP—both fuels the fire of growth and allows for unbridled anti-competitive concentration of service providers. That abuse and growth go hand-in-hand is no surprise in an unregulated market, but what remains confusing to policy makers and regulatory authorities is that the lack of regulatory oversight of the basic public necessity for telecommunication interconnection creates not only the opportunity for growth and carrier

diversity it encourages abuse of these resources and relationships undermining the goal of local competition in the market for traditional circuit switched services and Internet packet switched service. The issues raised by this merger only serve to buttress that consequence.

The real effect of no interconnection policy in this market has created a worst of both worlds situation where the deregulatory momentum in the circuit switched marketplace, combined with the technical necessity for hierarchical routing and growth of packet switched Internet traffic in its own market, have fueled the fire of anti-competitive provider concentration in both markets. This proposed merger is the result of a long chain of acquisitions and mergers over the very same time frame that this phenomenal growth has taken place not because these mergers are a function of efficiency in providing service, because it is clear that these combinations have occurred far more rapidly than these companies can integrate their operations, but rather it is the exploitation of a window of opportunity during which interconnection is not made fair and non-discriminatory. Witness not only the long chain of WorldCom's acquisitions and the complaints about anti-competitive peering policy but also the complaints of the incumbent Regional Bell Operating Companies (RBOCs) regarding the practices of both the new Competitive Access Providers (CAPs) feasting on the most profitable aspects of their business as well as the ISPs bypassing access charges on their switched circuit networks.

These trends, apart from what I have discussed about their impact on backbone traffic, logically at best result in a substantial forestalling of the expansion of universal access to include Internet service and at worst will lead to substantial cost increases to consumers in higher costs for traditional telecommunications service. Interestingly enough, since the passage of the 1996

Telecommunications Act and in the face of the continued trend in deregulation in traditional switched circuit services and the growth of Internet packet switched services, which are an order of magnitude more efficient to deliver over the same telecommunications fiber infrastructure, local telecommunications and basic cable service costs to consumers have increased well above the rate of inflation and fewer than .05% of subscribers have gained access to competitive local service.[1]

Therefore, rather than no threat to competition, efficiency and lower cost to the consumer which the applicants claim will be the result of this merger and as we witness the concentration of telecommunications service into a fewer number of hands elsewhere[2] contrary to all their claims about competition and lower cost, we witness higher costs and less meaningful competition in the marketplace. What is becoming obvious only now is that investment in universal service is threatened, the price, quality and network diversity of Internet connectivity is threatened, meaningful competition for the consumer's traditional local telecommunication needs is threatened over and above what it portends for the future a competitive marketplace for the Internet backbone. Thus this merger and the consequences it portends is the result of the total absence of fair and non-discriminatory enforcement of telecommunications interconnection in the Internet and both the merger and this policy must be reversed.

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[1] Steve Steinke, *Network Magazine*, March 1998, p. 40.

[2] Note AT&T's purchase of TCG/CerfNet, GTE's purchase of BBN and Genuity, the consolidation among the RBOCs, etc.